



VAHLKAMP

Bed Alarm v2.0 User's Manual



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1 General

Vahlkamp's Bed Alarm product is a stand-alone wireless nurse alarm for absence detection, featuring one sensor input.

The Bed Alarm offers a delayed alert function with 4 different delay times. This delay prevents an immediate nurse alarm when the client leaves the bed for a short time span, e.g. for a bathroom visit.

The detector input is equipped with an LED, indicating triggering of the input.

The Bed Alarm wireless nurse alarm is fully compatible with Vahlkamp's existing TeleCall system. Additionally, a potential-free relay output is provided for wired alarm systems. This output is activated for the duration of one second in case of alarm.

A single nurse alarm call is sent after triggering. Renewed alarm is only possible after a reset, by switching the Bed Alarm off and on again.

The Bed Alarm is powered by one 9V battery. A low battery is signalled by both the battery LED and a wireless alarm signal that differs from the usual signal.

2 General usage advice and precautions

- The Bed Alarm is an electronic device, intended for indoor use exclusively.
- The Bed Alarm is equipped with a radio transmitter, compliant with EU-standards for unlicensed operation. The Bed Alarm system is therefore approved for use within the EU only. Please contact Vahlkamp for information about use outside the EU.
- Do not expose the Bed Alarm device to temperatures below 0°C or over 50°C.
- Do not operate the Bed Alarm device in moist conditions.
- Prevent falling and impact damage to the Bed Alarm device.
- Prevent contact with solvents such as acetone, alcohol, and aggressive cleaning agents.
- Cleaning the Bed Alarm device is best done using a soft cloth, slightly moistened with a mild detergent solution. When cleaning, prevent water from entering the device through the openings for the timer knob and the power switch.
- Do not unscrew the Bed Alarm housing. The Bed Alarm device does not contain user-serviceable parts, apart from the battery.

Failing observe these precautions voids any warranty with regard to the Bed Alarm product.

3 First use and test

Before first use of a Bed Alarm device, please check if all materials and accessories are present:

Base set:

- 1 x Bed Alarm v2.0 device
- 1 x 9V alkaline battery (ANSI: 6LR61)
- 1 x bed alarm detector mat
- 1 x cable for bed alarm detector mat
- 1 x cable for wired alarm (when using a wired nurse alarm system)

3.1 Battery

Insert a 9V alkaline battery in the battery compartment at the bottom of the Bed Alarm device.

The use of a high-quality alkaline battery is recommended. With one or two alarms per day, this will provide on average 2 years of continuous use.

A low battery level is signalled by blinking of the battery LED '**Batt**' above the power switch. When this happens, replace the battery within one or two days.

3.2 Final check and testing

When using the wireless TeleCall system, please check if a matching receiver unit is present and switched on. In particular, check whether the Bed Alarm ID code matches the codes preset in the TeleCall receiver.

3.2.1 General

- Upon triggering of an alarm source, a single nurse alarm signal is issued. A subsequent nurse alarm signal is only possible after resetting the device.
- Always connect the sensor mat before switching on the Bed Alarm device, otherwise an unwanted nurse alarm may result.

3.2.2 Testing the Bed Alarm

The Bed Alarm is tested in the following manner:

- Make certain that the Bed Alarm device is switched off.
- Connect the detector mat to the input jack on the front, using the cable supplied. Make certain to insert the jack plug firmly.
- Turn the knob to select 5 seconds delay time.
- Sit or lie down on the detector mat, and switch on the Bed Alarm device.

The battery LED should light up green for two seconds, signalling that the device is switched on. When the green LED switches off, the Bed Alarm device enters the stand-by mode, and the input jack is monitored for an alarm condition.

- Leave the bed for a couple of seconds; the red LED above the input jack should

start blinking with 1-second intervals. However, no immediate nurse alarm should occur.

- Return to the bed within 5 seconds. The red input LED should stop blinking, and the Bed Alarm device returns to the stand-by mode without nurse alarm.
- Leave the bed for more than 5 seconds.

The nurse alarm is activated after 5 seconds. After this, the LED above the input will keep blinking to indicate that an alarm condition has occurred.

If so desired, this test can be repeated with the delay time setting at a different value.

3.2.3 Bed Alarm – delay time

The delay time for the Bed Alarm has four distinct values: no delay ('direct'), 5 seconds, 5 minutes, and 15 minutes. The delay time is selected via the rotary knob on the Bed Alarm device.

IMPORTANT: Avoid setting the rotary knob halfway between two settings, as this is the switch-over point between the two adjacent discrete time settings.

3.2.4 Reset

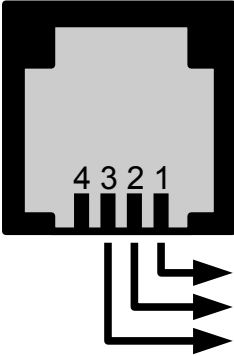
The Bed Alarm device is reset by simply switching the device off, so by sliding the power switch to the '0' position. Then take care to resolve the alarm condition by making certain that the client has returned to bed. After this, the Bed Alarm device can be switched on again.

3.3 Wired alarms

The Bed Alarm system also supports the use of a potential-free relay contact, suitable for both normal-open (NO) and normal-closed (NC) operation. Upon alarm, this relay is activated for one second. This wired alarm output provides a solution for situations where the distance to the nurse station or the alarm room exceeds the wireless range, or when TeleCall receivers are not used for other reasons.

The wired output connector is an RJ11-connector. Please refer to the hardware specifications for the correct connections.

4 Specifications

Sensor input jack		
Type	NC Contact	Mini-jack 3,5 mm stereo, ground and tip
Voltage (maximum)	3 V	Pulsed 10 ms / 1 second, voltage-free after alarm
Current (maximum)	300 μ A	Pulsed 10 ms / 1 second, current-free after alarm
Trip current	< 200 μ A	
Trip resistance	> 5 k Ω	
Transmitter		
Type	Band H/I, FSK	
Frequency	868,200 MHz	
Modulation Depth	30 kHz	
Modulation	50/58 bits	50 bits + 8-bits battery low message, non-recurrent
Relay Output		
Type	COM + NO + NC	Potential-free
Configuration	4-pin RJ11, rear view: 1: C 2: NO 3: NC 4: [unused]	 <p>C (common) NO (normally open) NC (normally closed)</p>
Contact voltage (max.)	220 VDC / 250 VAC	
Contact current (max.)	2 A	
Contact power (max.)	60 W	
Activation duration	1 second	Non-recurrent
Power Supply		
Type	1 x 9V (6LR61)	
Voltage (nominal)	9 V	
Voltage (maximum)	10 V	
Current consumption	10 μ A / 20 μ A	Stand-by / activated

4.1 EMC Conformity by parameter

Note: All measurements valid in temperature range between 0°C – 50°C

Parameter	Requirement	Measured	Status
Primary frequency	Band H/I, 869.2 MHz	869.200 MHz ±10 kHz	PASS
Output Power	< 10 mW (Band I)	5 mW (7 dBm) maximum	PASS
Tertiary Harmonic	< -50 dBm	-55 dBm maximum	PASS
FSK Modulation Depth	100 kHz	30 kHz +/-5 kHz above primary	PASS
Duty Cycle	< 0.1%	< 10 ms per 60 s	PASS

On request, a separate manufacturer declaration of CE/EMC conformity will be provided.